

portion of the catheter shaft proximate the multi-lumen balloon and coupled to the central lumen, the shaft inner lumen to receive a plurality of inflation lumens that are in fluid coupling with the plurality of inflatable outer lumens to allow an inflation medium to enter the plurality of inflatable outer lumens and independently inflate at least one inflatable outer lumen to position the central lumen of the multi-lumen balloon.

139. (New) The balloon catheter assembly of claim 138, wherein at least one inflatable outer lumen is kept in a deflated configuration when the balloon catheter assembly is deployed within a body vessel.

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140. (New) A method of manufacture of a balloon catheter assembly, the method comprising:

providing a multi-lumen balloon having a plurality of inflatable outer lumens disposed around a central lumen; and
coupling a catheter shaft to the multi-lumen balloon, the catheter shaft disposed proximate to the multi-lumen balloon, the catheter shaft having a shaft inner lumen through at least a portion of the catheter shaft proximate the multi-lumen balloon and coupled to the central lumen, the shaft inner lumen to receive a plurality of inflation lumens that are in fluid coupling with the plurality of inflatable outer lumens to allow an inflation medium to enter the plurality of inflatable outer lumens and independently inflate at least one inflatable outer lumen to position the central lumen of the multi-lumen balloon.

141. (New) A method of centering a lumen within a body vessel of a patient, the method comprising:

providing a multi-lumen balloon catheter assembly comprising a multi-lumen balloon with a plurality of inflatable outer lumens disposed around a central lumen and a catheter shaft disposed proximate to the multi-lumen balloon, wherein the catheter shaft comprises a shaft inner lumen through at least a portion of the catheter shaft proximate the multi-lumen balloon and coupled to the central lumen, the shaft inner lumen to receive a plurality of inflation lumens that are in fluid coupling with the plurality of inflatable outer lumens;

inserting the multi-lumen balloon catheter assembly into a body vessel lumen and advancing the balloon catheter to a desired region of the body vessel, the desired region of the body vessel having an eccentric residual plaque therein that causes the body vessel lumen to be off center relative to an arterial structure of the body vessel; and

inflating at least one inflatable outer lumen of the multi-lumen balloon using an inflation medium to center the central lumen relative to the arterial structure of the body vessel.

142. (New) The method of claim 141, wherein at least one of the plurality of inflatable outer lumens is kept in a deflated configuration when the multi-lumen balloon catheter assembly is deployed within the body vessel of the patient.

NOTICE OF RELATED APPLICATIONS

Please note that the above-referenced application is related to the following applications: